



LISTING OF THE CLAIMS

A detailed listing of claims is presented below. Please amend currently amended claims as indicated below including substituting clean versions for pending claims with the same number. In addition, clean text versions of pending claims not being currently amended that are under examination are also presented. It is understood that any claim presented in a clean version below has not been changed relative to the immediate prior version.

1. (Currently Amended) A method for fault diagnosis of a data network comprising:

a) receiving a plurality of fault data pertaining to said data network;

b) filtering said plurality of fault data to obtain a core of fault data;

i) requesting additional fault data from said data network when said core of fault data is insufficient to identify faults;

ii) receiving said additional fault data; and

c) analyzing said core of fault data and said additional fault data to identify a fault associated with said core of fault data.

2. (Original) The method for fault diagnosis as described in Claim 1, wherein b) comprises:

implementing a set of rules for filtering said plurality of fault data.

3. (Original) The method for fault diagnosis as described in Claim 1, wherein b) comprises:

eliminating redundant fault data in said plurality of fault data to obtain said core of fault data.

4. (Original) The method for fault diagnosis as described in Claim 1, wherein said b) comprises:

b1) correlating said plurality of fault data into recognized patterns of data comprising said core of fault data.

5. (Original) The method for fault diagnosis as described in Claim 1, wherein said plurality of fault data is taken from a group consisting of:

alarms;

events;

remote monitoring (RMON)-1 data; and

RMON-2 data.

6. (Original) The method for fault diagnosis as described in Claim 1, wherein c) further comprises:

determining whether said fault is due to a broken link or congestion in said data network.

7. (Original) The method for fault diagnosis as described in Claim 6, further comprising:

implementing a ping walk through said data network to determine a location of said broken link, if said fault is due to said broken link.

8. (Original) The method for fault diagnosis as described in Claim 6, further comprising:

isolating a source of said fault, if said fault is due to said congestion in said data network.

9. (Original) The method of fault diagnosis as described in Claim 1, further comprising:

displaying network location of said fault; and
displaying a cause of said fault.

10. (Original) The method of fault diagnosis as described in Claim 1, wherein said fault data includes performance data from said data network.

11. (Currently Amended) A method of fault diagnosis comprising:

a) receiving a plurality of fault data pertaining to said data network;

b) filtering said plurality of fault data to eliminate extraneous data down to a core of fault data; [[and]]

i) requesting additional fault data from said data network when said core of fault data is insufficient to identify faults;

ii) receiving said additional fault data;

c) determining whether said core of fault data and said additional fault data is due to a broken link or congestion in said data network;

d) performing a ping walk to isolate a cause and a source of said core of fault data and additional fault data and to determine a location of said source, if said core of fault data and additional fault data is due to said broken link; and

e) using deductive reasoning to isolate said source of said core of fault data and additional fault data and identify said cause of said core of fault data and additional fault data, if said core of fault data and additional fault data is due to said congestion.

12. (Original) The method for fault diagnosis as described in Claim 11, wherein b) comprises:

eliminating redundant fault data in said plurality of fault data to obtain said core of fault data.

13. (Original) The method for fault diagnosis as described in Claim 11, wherein b) comprises:

b1) correlating said plurality of fault data into a recognized pattern of data forming said core of fault data.

14. (Original) The method for fault diagnosis as described in Claim 11, wherein d) comprises:

sending a ping signal to each of a plurality of addresses in said data network;

determining which addresses are unreachable; and

comparing a network topology to unreachable addresses to determine a location of said broken link in said data network.

15. (Original) The method for fault diagnosis as described in Claim 11, wherein e) comprises:

e1) monitoring said data network to determine traffic data; and

e2) analyzing said traffic data using said deductive reasoning to isolate said source and identify said fault.

16. (Original) The method for fault diagnosis as described in Claim 15, wherein e1) comprises:

determining queue length in network devices;

determining delay over a path in said data network; and

determining load of traffic over said data network.

17. (Original) The method of fault diagnosis as described in Claim 11, further comprising:

querying said data network for additional fault data if said core of fault data is insufficient to identify said fault.

18. (Original) The method of fault diagnosis as described in Claim 11, further comprising:

correcting said fault.

19. (Currently Amended) A data network that is capable of fault diagnosis comprising:

a plurality of subnetworks that generate a plurality of fault data, each of said plurality of subnetworks comprising network components that are coupled together via a distributing component;

a plurality of performance managers coupled to said plurality of subnetworks for monitoring said plurality of subnetworks for said plurality of fault data, [[and]] for filtering said plurality of fault data, and for requesting additional fault data when said plurality of fault data is insufficient, each of said plurality of network performance managers coupled to and associated with one of said plurality of subnetworks; and

a single network management station coupled to each of said plurality of performance managers for analyzing said plurality of fault data that is filtered and said additional fault data to identify faults and isolate sources of said faults.

20. (Original) The data network as described in Claim 19, wherein said network components are computer systems.

21. (Original) The data network as described in Claim 19, wherein said distributing component is a switch.

22. (Original) The data network as described in Claim 19, wherein said plurality of fault data is management information base (MIB) information that is generated by said network components and said distributing component in each of said plurality of subnetworks.

23. (Currently Amended) The data network as described in Claim 19, further comprising:

a rule set that is implemented by said network management station for analyzing said plurality of fault data [[that is]] and said additional fault data that are filtered to identify said faults and isolate said sources of said faults.

24. (Currently Amended) The data network as described in Claim 19, further comprising:

a rule set that is implemented by each of said plurality of performance managers for filtering said plurality of fault data and said additional fault data.

25. (Original) The data network as described in Claim 19, wherein said plurality of fault data includes performance data from said data network.

26. (Original) The data network as described in Claim 19, wherein each of said plurality of performance managers is a self diagnosing network performance manager (SDNNPM)

27. (Currently Amended) A computer system comprising:
a processor;
a display coupled to said processor;
a computer readable memory coupled to said processor and containing program instructions that, when executed, implement a method for fault diagnosis of a data network comprising:

a) receiving a plurality of fault data pertaining to said data network;

b) filtering said plurality of fault data to obtain a core of fault data;

i) requesting additional fault data from said data network when said core of fault data is insufficient to identify faults;

ii) receiving said additional fault data; and

c) analyzing said core of fault data and said additional fault data to identify a fault associated with said core of fault data.

28. The computer system as described in Claim 27, wherein b) in said method comprises:

implementing a set of rules for filtering said plurality of fault data.

29. (Original) The computer system as described in Claim 27, wherein b) in said method comprises:

eliminating redundant fault data in said plurality of fault data to obtain said core of fault data.

30. (Original) The computer system as described in Claim 27, wherein b) in said method comprises:

b1) correlating said plurality of fault data into recognized patterns of data comprising said core of fault data.

31. (Original) The computer system as described in Claim 27, wherein said plurality of fault data is taken from a group consisting of:

alarms;

events;

remote monitoring (RMON)-1 data; and

RMON-2 data.

32. (Original) The computer system as described in Claim 27, wherein c) in said method further comprises:

determining whether said fault is due to a broken link or congestion in said data network.

33. (Original) The computer system as described in Claim 32, wherein said method further comprises:

implementing a ping walk through said data network to determine a location of said broken link, if said fault is due to said broken link.

34. (Original) The computer system as described in Claim 32, wherein said method further comprises:

isolating a source of said fault, if said fault is due to said congestion in said data network.

35. (Original) The computer system as described in Claim 27, wherein said method further comprises:

displaying network location of said fault; and
displaying a cause of said fault.

36. (Original) The computer system as described in
Claim 27, wherein said fault data includes performance data
from said data network.